



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,032	06/13/2005	Ken-ichi Inui	4439-4034	8848
27123	7590	11/28/2007	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			LI, RUIXIANG	
ART UNIT		PAPER NUMBER		
1646				
NOTIFICATION DATE		DELIVERY MODE		
11/28/2007		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com  
Shopkins@Morganfinnegan.com  
jmedina@Morganfinnegan.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/539,032	INUI ET AL.	
	<b>Examiner</b> Ruixiang Li	<b>Art Unit</b> 1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 10/17/2007.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-29 is/are pending in the application.  
 4a) Of the above claim(s) 4, 5, 7-9, 14-17, 19, and 21-29 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3, 6, 10-13, 18, and 20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 06/13/2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 04/21/2006 & 06/13/2005.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: Sequence alignment.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Group I (claims 1-3, 6, 10-13, 18, and 20) and SEQ ID NO: 1 in the reply filed on 10/17/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 1-29 are pending. Claims 1-3, 6, 10-13, 18, and 20 are currently under consideration. All other claims are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

### *Information Disclosure Statement*

3. The information disclosure statements filed on 04/21/2006 and 06/13/2005 have been considered by the examiner.

### *Drawings*

4. The drawings filed on 06/13/2005 are accepted by the Examiner.

### *Claim Rejections—35 USC § 101*

5. 35 U.S.C. §101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-3 are rejected under 35 U.S.C. §101 because the claimed invention is directed non-statutory subject matter.

Claims 1-3, as written, do not sufficiently distinguish over a DNA that exists naturally because the claims do not particularly point out any non-naturally occurring differences between the claimed products and the naturally occurring products. In the absence of the hand of man, the naturally occurring products are considered non-statutory subject matter. See *Diamond v. Chakrabarty*, 447 U.S. 303, 206 USPQ 193 (1980). The claims should be amended to indicate the hand of the inventor, e.g., by insertion of “isolated” or “purified”. See MPEP 2105.

***Claim Rejections—35 USC § 112, 1<sup>st</sup> paragraph***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-3, 6, 10-13, 18, and 20 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an isolated DNA molecule encoding the polypeptide of SEQ ID NO: 2, does not reasonably provide enablement for the instantly claimed genus of DNA molecules and probes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The factors that are considered when determining whether a disclosure

satisfies enablement requirement include: (i) the quantity of experimentation necessary; (ii) the amount of direction or guidance presented; (iii) the existence of working examples; (iv) the nature of the invention; (v) the state of the prior art; (vi) the relative skill of those in the art; (vii) the predictability or unpredictability of the art; and (viii) the breadth of the claims. *Ex Parte Forman*, 230 USPQ 546 (Bd Pat. App. & Int. 1986); *In re Wands*, 858 F. 2d 731, 8 USPQ 2d 1400 (Fed. Cir. 1988).

Claim 1 recites a DNA which comprises a base sequence shown by SEQ ID NO: 1 or its complementary sequence, or a sequence containing part or whole of these sequences, claim 2 recites a DNA which hybridizes with then DNA according to claim 1 under a stringent condition, and which encodes a polypeptide having glucose and/or fructose transporter function, whereas claim 3 recites a DNA which encodes a polypeptide comprising an amino acid sequence wherein one or a few amino acid sequence are deleted, substituted or added in the amino acid sequence of SEQ ID NO: 2. Claims 18 and 20 are drawn to a probe comprising whole or part of an antisense strand of the base sequence of claim 1. Claims 6, 10-13, 18, and 20 depend from claims 1-3, directly or indirectly. There are no structural and functional limitations for the DNA molecules in claim 1. Claims 2 and 3 do not recite a structural limitation for the DNA molecules. Thus, the claims are overly broad.

While providing sufficient guidance and/or working examples with respect to make and use the DNA molecule that encodes the polypeptide of SEQ ID NO: 2, the instant disclosure fails to provide sufficient guidance and/or working examples to make and use the variants or homologues of DNA molecule that encodes the

polypeptide of SEQ ID NO: 2 and the probes comprising part of an antisense strand of the base sequence of claim 1.

It is unpredictable whether a variant or homologue of SEQ ID NO: 2 would retain the same function as that of the full length of polypeptide of SEQ ID NO: 2. The state of the art (See, e.g., Ngo, et al, *The Protein Folding Problem and Tertiary Structure Prediction*, 1994; Merz, et al. (ed.), Birkhauser, Boston, MA, pp. 433 and 492-495) is such that the relationship between sequence of a protein and its activity is not well understood and is not predictable. Excising out portions of a protein or modifications to a protein, e.g., by substitutions or deletions, would often result in deleterious effects to the overall activity and effectiveness of the protein.

Furthermore, the state of the art is such that determining the specificity of hybridization is empirical by nature and the effect of mismatches is unpredictable, as taught by Wallace et al. (Methods Enzymol. 152:432-443, 1987) and Sambrook et al. (Molecular Cloning, A Laboratory Manual, 2<sup>nd</sup> Edition, 1989, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, page 11.47). It is well known in the art that hybridization yields nucleic acids that are structurally related, but functionally different. Thus, in view of the nature of complexity of the work and unpredictability of the art, it would take undue experimentation for one skilled in the art to make and use the claimed genus of DNA molecules without sufficient guidance, working examples, and knowledge about functions of encompassed DNA molecules structurally related to SEQ ID NO: 1.

It is also noted that claim 20 recites "a pharmaceutical for diagnosing glucose

an/or fructose transporter function". However, the instant disclosure fails to disclose an association of glucose an/or fructose transporter function with any particular diseases. It would take undue experimentation for one skilled in the art to practice the claimed invention.

Accordingly, The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the DNA molecules and probes commensurate in scope with these claims.

9. Claims 1-3, 6, 10-13, 18, and 20 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof.

Claim 1 recites a DNA which comprises a base sequence shown by SEQ ID NO: 1 or its complementary sequence, or a sequence containing part or whole of these sequences. Claim 2 recites a DNA which hybridizes with then DNA according to claim 1 under a stringent condition, and which encodes a polypeptide having glucose and/or fructose transporter function. Claim 3 recites a DNA which encodes a

polypeptide comprising an amino acid sequence wherein one or a few amino acid sequence are deleted, substituted or added in the amino acid sequence of SEQ ID NO: 2. Claims 6, 10-13, 18, and 20 depend from claims 1-3, directly or indirectly. Thus, the claims encompass a genus of DNA molecules that are variants and homologues of the DNA that encodes the polypeptide of SEQ ID NO: 2. Claim 1 does not require that the DNA possess any particular biological activity, nor any particular conserved structure, nor other disclosed distinguishing feature. While claims 2 and 3 recite a functional limitation, they do not require that the DNA molecules possess any particular any particular conserved structure nor other disclosed distinguishing feature.

The instant disclosure of the DNA set forth in SEQ ID NO: 1 that encodes a Na<sup>+</sup>-dependent glucose and fructose transporter in rat kidney set forth in SEQ ID NO: 2 does not adequately support the scope of the recited genus of DNA molecules, which encompasses a substantial variety of homologues or variants of the DNA that encodes the polypeptide of SEQ ID NO: 2. A description of a genus of cDNA may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus, or of a recitation of structural features common to the genus, which features constitute a substantial portion of the genus. *Regents of the University of California v. Eli Lilly & Co.*, 119 F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). While disclosing the amino acid sequences of SEQ ID NO: 2 and its encoding DNA of SEQ ID NO: 1, the instant disclosure fails to provide sufficient description information, such as definitive

structural or functional features of the recited genus of DNA molecules or the polypeptides encoded by the DNA molecules. There is no description of the conserved regions that are critical to the structure and function of the genus recited. There is no description of the sites at which variability may be tolerated and there is no information regarding the relation of structure to function.

Moreover, claim 1 encompasses virtually any random nucleic acid sequence of any length as long as it comprises a portion of SEQ ID NO: 1 since the claim does not recite any structural and functional limitations. Furthermore, the prior art does not provide compensatory structural or correlative teachings to enable one skilled in the art to identify the encompassed DNA molecules as being identical to those instantly claimed.

Due to the breadth of the claimed genus and lack of the definitive structural or functional features of the claimed genus, one skilled in the art would not recognize from the disclosure that the applicant was in possession of the claimed genus. Accordingly, only the isolated DNA molecule encoding the polypeptide of SEQ ID NO: 2 (including the DNA of SEQ ID NO: 1), but not the full breadth of the claims meets the written description provision of 35 U.S.C. §112, first paragraph.

***Claim Rejections—35 USC§ 112, 2<sup>nd</sup> paragraph***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1, 2, 6, 10-13, 18, and 20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it recites a DNA which comprises a base sequence shown by SEQ ID NO: 1 or its complementary sequence, or a sequence containing part or whole of these sequences. It is unclear "its complementary sequence" is referred to the complementary sequence of SEQ ID NO: 1 or the complementary sequence of the DNA. In addition, the claim recites "a sequence containing part of whole of these sequences". It is unclear what 'these sequences" are referred to.

Claim 2 recites "a stringent condition". However, neither the specification nor the art provides an unambiguous definition for the term, rendering the claim indefinite.

Claim 18 is indefinite because it recites "a probe for diagnosing glucose and/or fructose transporter function". It is unclear what the metes and bounds of the preamble are. Claim 20 is indefinite because the language is so ambiguous that it is unclear what is being claimed.

Claims 6 and 10-13 are rejected as dependent claims from claim 1.

***Claim Rejections—35 U.S.C. §102 (e)***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Isogai et al. (U.S. Patent No. 6,943,241 B2, September 13, 2005; 102 (e) date: 1/25/2002).

Isogai et al. teach a DNA comprising part of SEQ ID NO: 1 (see attached sequence alignment), meeting the limitations of claim 1.

***Claim Objections—Minor Informalities***

14. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n).

15. Claims 2, 3, 6, 10-13, 18, and 20 are objected because they recite “and/or”.

16. Claims 1 and 3 are objected because they use an indefinite article to refer to a unique sequence; “a base sequence shown by SEQ ID NO: 1” in claim 1 should be amended to “the base sequence shown in SEQ ID NO: 1”, whereas “an amino acid sequence shown by SEQ ID NO: 2” in claim 3 should be amended to “the amino acid sequence shown by SEQ ID NO: 2”.

17. Claim 20 is objected to because it recites “A pharmaceutical”, which is not complete in meaning.

Appropriate correction is required.

***Conclusion***

18. No claims are allowed.

***Advisory Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (571) 272-0875. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, can be reached on (571) 272-0835. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, please contact the Electronic Business Center (EBC) at the toll-free phone number 866-217-9197.

*Ruixiang Li*

Ruixiang Li, Ph.D.  
Primary Examiner  
November 21, 2007

RUIXIANG LI, PH.D.  
PRIMARY EXAMINER

## Sequence Alignment for 10/539,032

### Alignment 1

US-10-104-047-1471

; Sequence 1471, Application US/10104047

; Patent No. 6943241

; GENERAL INFORMATION:

; APPLICANT: HELIX RESEARCH INSTITUTE

; TITLE OF INVENTION: No. 6943241el full length cDNA

; FILE REFERENCE: H1-A0105

; CURRENT APPLICATION NUMBER: US/10/104,047

; CURRENT FILING DATE: 2002-03-25

; PRIOR APPLICATION NUMBER:

; PRIOR FILING DATE:

; NUMBER OF SEQ ID NOS: 4096

; SOFTWARE: PatentIn Ver. 2.1

; SEQ ID NO 1471

; LENGTH: 2052

; TYPE: DNA

; ORGANISM: Homo sapiens

US-10-104-047-1471

Query Match 38.5%; Score 837.4; DB 3; Length 2052;  
Best Local Similarity 72.2%; Pred. No. 9.7e-239;  
Matches 1139; Conservative 0; Mismatches 416; Indels 22; Gaps 3;

Qy	31	CTCAGAGCTCCAGGGACCCCTGGCAAAAAGCTGGACCTCACCAAAAACCCCTTGTCTGGAG	90
Db	153	CTCGGAGCTCCAGAAGTTCTGCTGAGAAGCGCGCGGCAGC-AAGACGACTTCTCCGGAG	211
Qy	91	CCACCAAGCTGGGTCGGAAATGGAGTTCCGTGGGTCCGGGGCCACTGCTGTTGAGCAGC	150
Db	212	TCGCCGAGCTGGAGTTAGAGGTGGAGCTCCGTGGGCCGGCCCCGGCTGCAGGGCAGC	271
Qy	151	ACCTCCTCCAGTCCGAGACCCCAGGGAGAAATGGGCTGCAG-----G	192
Db	272	GGCTCCTGCAGGCAGGCCCCGGCGAGAATGAGCCGGAGCCGGAGGTGGTGGTGGTCT	331
Qy	193	CCACATCGAGTGACCAAGTGGAAAGAACACTGCGCTGGTCACCACTGTGGTCTGAATG	252
Db	332	CCTGGCAGAGCGGTGGGACCGGGAGCAAGCTCGGTGGTTCACCACCTGATGCTGTGTG	391
Qy	253	CTGCTTCTGGGAATGGGAGTGAGCGCTGCTGTGCTGGACCCACATTCCAGACCTGG	312
Db	392	CCTCCTTCTGGGCTGGGATTGAGTGTGCTATAGTGGACCCACGTTCAAGATTGG	451
Qy	313	CCAGAAACGTGAACCGAACATCAGCAGCCTTCCGAAATCTCGTGGCCGAGCCTCG	372
Db	452	CAACAAACGTGAACCGAAATATCAGTAGTGTCTTCAAGATTGGTCGTGCCTTGG	511
Qy	373	GCTACCTGGCGGCTCTGTGGTTGGTGGGTGCTTTCGACTGCATGAATCATTCTAC	432
Db	512	GATATTGAGTGGCTCTGTGATTGGGATTCTTCTGTCGATGTCAATTGGTGGTGG	571
Qy	433	TTTGCCCCCTGCTTACCTGCTTACTGCGGCCGGCTTACCTCACCCCTTCTGAAAA	492
Db	572	TTTGGAATCTCAATGTCGGCTACCACCGTTGGCTTATCTGTTCTTGGCAAGA	631
Qy	493	CAGCTGCCTTACTGACTGCCATGATGTCTATTACCGGTGTCATTTGGTGTCTGGATA	552
Db	632	CAGCAATATTACTCACTGTCATGATGTCTATCTCGGTGTTCAATTGGCATTCTGGATA	691
Qy	553	CAGGTGGGAATGTCCTCATCTTGGACCTTGGGGGACAAAGGAGCCCCACATATTCA	612

Db	692	CAGGTGGTAACGTCTTATCTTGCTATTGGGGGACAAAGGAGCCCACATATGCAGG	751
Qy	613	CCTTGCACCTCAGTTGCCCTGGGTGCCTCCTGGCTCCCTGCTGGCTAAATTGGCCT	672
Db	752	CCTTACACTCTTTGCCCTGGGTGCCTTTGGCTCACTGCTAGCTAAACTGGCTT	811
Qy	673	GGGGTACCAACAGCATCTGCTCAGAACACACAGAGCCTCAGTAGACCAGTCAGCCTGA	732
Db	812	TGGGTCCGACAGCGTCTGCTGAAAACCACACAGAGTCTGACTT---CCATCCTGCACTCA	868
Qy	733	ACCGATCCTTGAAGCCGCCCTCAGACTCTGTGTTGGCGGTACCTGACGACATGAATCTTC	792
Db	869	ACCAATCATCTGATGCTGACTCAGAACAGCTCTGGAGTACCTAATGATAAGAATTAC	928
Qy	793	TGTGGCGTACGCTTCCATTGAAACCTATGTTCTAGTACTTCTGTCTTCCCTGTTGCTC	852
Db	929	TGTGGCTTATGCTGTTATCGGTACTTACATGTTCTTAGTTCTGTCATTTTTTGTC	988
Qy	853	CATTCTTAAAAAGAGGTCAAAGCAGAAAAAATCCGCAGCGTCTGCTCAGGGAGCTCGAA	912
Db	989	TGTTTTAAAGAATAGCTCAAAGCAAGAAAAGCAAGAGCATCTGCTGAGACATTTCGAA	1048
Qy	913	GGGCTAAATACCAACAGGCCCTGCTATGCCCTCTTCCCTTCTTCTTCTACGTGG	972
Db	1049	GAGCAAAATATCACAACGCCCTCTTGTCTCCCTTTCTGTTCTCTTTATGTTG	1108
Qy	973	GAGCGGAGGTGACCTACGGCTCTTACGTATTCTCCTCGCCACCACCGTTGGCATGG	1032
Db	1109	GAGCTGAGGTAACATATGACTCTTATGTTCTCATTTGCAACCACCCATGCTGGCATGA	1168
Qy	1033	AAGAGAGCGAGGCAGCTGGCTTGAACCTCCATCTCTGGGGACCTCGCAGCCTGCAGGG	1092
Db	1169	AAGAAAGTGAAGCTGCTGGGTGAACCTCCATCTCTGGGGACATTGCAAGCCTGCAGGG	1228
Qy	1093	GCCTGGCCATCTTCGCAACGCTCTTACAGCCTGGGACCATGATGGTGTGTAAACA	1152
Db	1229	GCCTGGCAATCTTTTGCTACCTGTTACAGCCTGAAACCATGATTGTTGAGCAACA	1288
Qy	1153	TTGGCAGCCTGGCCTCATCTTCTGGTCTTTGACAAGAGCCCTTTGCCTCT	1212
Db	1289	TTGGCAGCCTGACTTCATCTTATTCTGGTCTTTGACAAGAACCAATTGTCTCT	1348
Qy	1213	GGATCGCGTCTCTGTGTATGGAGCCTCAATGGCTGCCACGTTCCCAGCGGCATCTCCT	1272
Db	1349	GGATAGCAACTCAGTGTATGGGCTCAATGGCAACCACATTCCGAGTGGTGTCTT	1408
Qy	1273	GGATTGAGCAGTACACCACCTTAACCTGGAAATCCGCTGGCTCATTCTGGTGGTGCTG	1332
Db	1409	GGATTGAGCAGTACACGACCATGGAAATCTGCAGCATTGGTAATTGGTGCTT	1468
Qy	1333	CCCTGGGACTAATGGCAGCTCCTGCATTATCTGGAATTCTTCAGGGACACTATCCGATC	1392
Db	1469	CCCTGGGAGAAATGGCTATTCCCTGCAGTCATTGGAATTCTCAAGGAAAATACCCTGATT	1528
Qy	1393	TGCCAGTAATTCTGTACATGTGTCGGCTCAGCAGTATTAAACAACGTGTTATTCCCTG	1452
Db	1529	TGCCTGTAGTTCTGTATACCTCTTGGGAGCATCAATAGCTACTGGTATTATTCCCTG	1588
Qy	1453	TGATGTATAAAAGTAGCCACCTTACCTCTGGATCGAAAGCAGGAAAAAGCATCAACAGTG	1512
Db	1589	TGCTATATAAAATTAGCCACTTCACCTCTTGATGCCAGCGAAAAGAACAGAAAGAGTG	1648

